LUGOVOY, A. A.

JPRS 56030
18 May 72

UDC 612.215-06:612.766"5"

DIURNAL PERIODICITY OF THE HUMAN RESPIRATION RATE IN EXPERIMENTS WITH AN INVERSION OF THE WORK AND REST SCHEDULE

[Article by A. A. Lugovoy, Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 2, March-April 1972, pp 75-81, submitted for publication 19 July 1971]

Abstract: Experiments were carried out on eight male test subjects who lived for 25 to 45 days in isolation chambers with controlled comfortable atmospheres. Exposure to an inverted (12-hour shift) work-rest cycle, the operation of ecological time sensors being excluded, brought about a gradual rearrangement of the diurnal rhythm of the respiration rate in accordance with the altered cycle. A study of the different patterns of adjustment to the new cycle revealed that the rearrangement developed the faster the greater was the sleep deficit during the transition. Endogenous and exogenous components of the diurnal rhythm of the respiration rate were detected. The endogenous component, which is related to the body's biological clock, is characterized by inertia, a relatively low rate of restructuring, whereas the exogenous component is dependent on the diurnal variations in human psychophysiological activity and changed simultaneously with changes in man's work-rest cycles. The difference between the responses of the components of diurnal rhythm has been noted in other physiological parameters as well.

A study of the respiration rate is of interest for characterizing the processes of adaptation of the human body to different regimes of vital activity. It is known that during nighttime sleep the respiration rate decreases (A. N. Litsov, 1968; Henzel, Snyder, et al., and others), accompanied by a decrease in lung ventilation (Wilker), an increase in CO_2 pressure in the pulmonary alveoli (Bass and Herr; Ewiren) and in the blood (Straub; Collwitter-Meyer and Kroetz). Some increase in the respiration rate observed

LUGOVOY, L. A.

JPRS 55687
19 Apr 1972

UDC 612.461.6:546.32'52''-06:612'821.7-064

DIURNAL DYNAMICS OF POTASSIUM EXCRETION IN HUMAN URINE DURING PROLONGED WAKEFULNESS

[Article by A. A. Zykova, L. A. Lugovoy and V. P. Kratov; Moscow, Kosmicheskaya Biologiya i Meditsina, Russian, Vol 6, No 1, pp 62-66, 1972, submitted for publication 5 July 1971]

Abstract: Diurnal variations in human urine potassium excretion were investigated in ten test subjects confined to an isolation chamber but adhering to a normal work-rest cycle during a 72-hour period of continuous wakefulness. Sleep deprivation brought about considerable disturbances in diurnal potassium excretion which varied in their pattern and level from subject to subject. In some cases a displacement of minimum and maximum points prevailed; in others there was a decrease in the amplitude of diurnal variations. The results reveal an appreciable variability in functioning of circadian periodic systems in different subjects. This result can be applied in spacecrew selection with respect to biorhythmological parameters.

It has been established that the excretion of potassium in the urine transpires with a clearly expressed endogenous diurnal cyclicity with maximum values during the daytime hours and minimum values during the nighttime hours (Simpson and Lobban; Lyagodu and Dzenisevich, and others). That it is of an endogenous nature is indicated by the prolonged retention of the initial period of this cyclicity when the length of day is changed; under such conditions a restructuring of the diurnal rhythm of potassium excretion has been observed relatively rarely and transpired over a long period (Lewis, et al.; Lobban; Mills and Stanbury; Simpson and Lobban). In such cases the rhythm of potassium excretion is far more stable than the rhythm of change in body temperature (Lobban; Mills and Stanbury), diuresis, and excretion of sodium and chlorides. (Simpson and Lobban; Mills and Stanbury). After transmeridional flights the restructuring of the diurnal rhythm in potassium excretion occurs more easily and transpires relatively more rapidly than in cases with a modified duration of day (Lafontaine, et al.). During a 45-day experiment with the use of accumulated social time sensors it was

USSR UDC 62-503.53-526-522.6

LUGOVOY, M. N., and MIKEROV, A. G.

"An Electropneumatic Tracking System"

USSR Author's Certificate No 324415, filed 4 Jan 70, published 29 Feb 72 (from RZH-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A188 P)

Translation: The proposed electropneumatic (electrohydraulic) tracking system is designed for controlling various objects like radar antennas in accordance with signals from low-power electric pickups and can be used in electropneumatic and electrohydraulic automatic control systems. There are electropneumatic tracking systems in which a slide valve is moved or a jet tube is rotated by a solenoid or electromagnetic rotator. In view of the high sensitivity of electromagnetic controllers to contamination and to climatic and mechanical effects, systems have recently appeared in which an electric motor is used for driving a pneumatic or hydraulic converter. The electric motor is an integrating link and thus has first-order astaticism. This reduces stability and requires complicated devices and circuits to ensure stability, such as three tachogenerators. As a feature which sets the proposed electropneumatic system apart from conventional

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USSR

LUGOVOY, M. N., and MIKEROV, A. G., USSR Author's Certificate No 324415, filed 4 Jan 70, published 29 Feb 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A188 P)

units, the dynamic characteristics of the system are improved by adding a pneumatic device whose inputs are connected to the working cavities of a power cylinder and to the shaft of an electric motor.

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Stress Analysis and Stability Studies

USSR UDC 539.3

LUGOVOY, P. Z., Kiev, Institute of Mechanics ANUrk SSR

"Stress Concentration Around a Circular Hole in a Conical Shell"

Kiev, Academiya Nauk Ukr SSR, Prikladnaya Mekhanika, Vol 7, No 2, Feb 71, pp 63-70

Abstract: The problem of the state of stresses in a circular conical shell, weakened by a large circular hole is investigated, within the frame of a linear theory of thin shallow shells, using the Bubnov-Galerkin method. The problem is formulated and the solution method is described. A variational equation of the mixed type, with respect to flexure and force functions, is reduced to a system of linear algebraic equations. Stress concentration around a circular free hole in a conical compressed shell, and subjected to compression forces is analyzed by using a computer. The results are presented in a table in terms of concentration coefficient around the hole for a conical and a cylindrical shell. A comparison with avialable data for a cylindrical shell indicates a satisfactory convergence of the method used here. 12 formulas, 2 tables, 10 references.

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USSR

LUGOVOY, V. N., PROKHOROV, A. M., Physics Institute imeni P. N. Lebedev, Academy of Sciences of the USSR

"Heating and Containment of a Plasma in Crossed Light Beams"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 17, No 1, 5 Jan 73, pp 52-55

Abstract: A number of theoretical papers have dealt with the problem of pulsed laser heating of a plasma to produce a thermonuclear reaction. These previous papers have considered conditions in which the heating time does not exceed the time of hydrodynamic dispersion of the plasma. In this article the authors propose another method of pulsed laser plasma heating whereby the heating time may be determined by the duration of the laser pulse and thus may be considerably longer than the corresponding time of hydrodynamic dissipation. In addition, in contrast to previous theories, the area of the skin layer in the suggested model (where direct conversion of energy takes place) may be much greater than the area of the surface which bounds the entire volume of the heated plasma. This type of heating requires placing the material in the region of intersection of two laser beams at some angle.

USSR

LUGOVOY, V. M., PROKHOROV, A. M., Pis'ma v ZhETF, No 1, Jan 73, pp 52-55

The authors consider focused beams with given focal diameters intersecting in the vicinity of these focal regions. The kinetics of plasma heating in the simplest model are analyzed. A numerical example is given. Conditions of plasma containment are discussed, and it is shown that plasma density in microregions may increase with time due to compression by the electromagnetic field. The authors thank A. A. Samokhin and M. V. Fedorov for useful discussion of the work.

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USSR

LUGOVOY, V. N., PROKHOROV, A. M., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"On the Possibility of Generating Ultrashort Light Pulses in Lasers With a Low Luminescence Line Width of the Laser Material"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 15, No. 1, 5 Jan 72, pp 70-72

Abstract: A connected laser-resonator system is proposed in which the generation frequencies of the laser are automatically selected close to the natural frequencies of the particular resonator. The system consists of a ring or axial resonator R_0 inside which there is a selector for transverse types of oscillations, an active laser material, material active in the induced Raman emission spectrum or in the Mandelstam-Brillouin spectrum, a wide-band nonlinear absorber, and a plane-parallel resonator R_1. To avoid generation due to reflections from the resonator R_1, one can use a Faraday cell or set the resonator R_1 with a deflection with respect to the direction of the beam in the laser. In this case those types of oscillations of the

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USSR

LUGOVOY, V. N., PROKHOROV, A. M., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol. 15, No. 1, 5 Jan 72, pp 70-72

resonator R_0 have the greatest Q for which the coefficient for passage through the resonator R_1 is a maximum. In turn, the coefficient for passage through the resonator R_1 has sharp maxima corresponding to its natural frequencies. The resonator R_1 therefore simultaneously fills the role of a highly effective selector of axial or longitudinal types of oscillations in the resonator R_0 and selects the generation frequencies close to its natural frequencies. Two cases are considered: (1) the material active in the induced Raman emission spectrum is located in the resonator R_1, and in the Resonator R_0 there is only active laser material, a nonlinear absorber generally being absent; (2) the material active in the Mandelstam-Brillouin stimulated emission spectrum and the nonlinear absorber, just as the active laser material, are located in the resonator R_0, and the resonator R_1 is filled with a linear medium. It was found that in both cases the generation of ultrashort pulses with a spectral width exceeding the width of the luminescence line of the active laser material is possible, apparently without lowering the laser efficiency.

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1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT7C

TITLE--THE DIAGNOSIS OF PYRAMIDAL LESIONS IN THE TERMINAL STAGES OF ORGANIC PSYCHOSES OF OLD AGE -U-

AUTHOR--LUGOVSKIY, B.K.

CCUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPAROLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970, VOL 70, NR 6, PP885-888

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GERIATRICS, PSYCHOSIS, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1163 STEP NO--UR/0246/70/070/005/0885/0888

CIRC ACCESSION NO--AP0126765

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT7C

CIRC ACCESSION NO--AP0126765

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR ON RATHER SIMPLE, ACCESSIBLE IN PRACTICAL WORK DIFFERENT TESTS FOR THE DISCLOSURE OF PYRAMIDAL INSUFFICIENCY IN PATIENTS WITH THE OUTCOME PERIOD IN ATROPHICAL AND VASCULAR PSYCHOSES OF OLD AGE . THE EXISTENCE OF PYRAMIDAL SYMPTOMATOLOGY, IN THE OPINION OF THE AUTHOR, TESTIFIES IN FAVOR OF THE VASCULAR PROCESS. FACILITY: MOGILEVSKAYA OBLASTNAYA PSIKHIATRICHESKAYA BOL'NITSA.

UNCLASSIFIED

Acc. Nr.: AP0029095 Ref. Code: UR 0246

PRIMARY SOURCE: Zhurnal Nevropatologii i Psikhiatrii, 1970, Vol 70, Nr 1, pp 101-106

THE CLINICAL PICTURE OF FRIEDREICHS DISEASE PROCEEDING WITH MENTAL DISORDERS

B. K. Lugovskiy

The author reports of 4 cases of Friedreichs disease, accompanied by severe mental disorders. These changes were expressed in progressive dementia and affective (dysphoric) disturbances. Besides such changes in 2 cases there were paranoid, hallucinatory-paranoid and catatonoform symptoms. It is stressed that it is quite important to delinente Friedreichs disease from the neural amyotrophy, and from P. Marie disease inasmuch as in all the observed cases there were peripheral pareses of the ex extremities.

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REEL/FRAME
19680606

USSR

UDC 532.526.4

MIRONOV, B. P., LUGOVSKIY, P. P.

"Study of Flow in the Wall Area of a Turbulent Boundary Layer with Injection"

Inzhenerno-fizicheskiy Zhurnal, Vol 22, No 3, 1972, pp 460-466.

Abstract: The method of stroboscopic visualization is used to measure the fields of instantaneous velocities in a tuburlent boundary layer with injection. The distribution of average velocity and its pulsation component through the height of the boundary layer is presented for values of $\eta \geq 2$ and various injection parameters. It is noted that with increasing injection, the dimensionless thickness of the viscous sublayer $\eta_1 = u^*y_1/\nu$ decreases. The length of the transition zone also decreases. A slight change in static pressure through the height of the boundary layer is demonstrated. 1 Table; 4 Figures; 18 Biblio. Refs.

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USSR

UDC 537.581:535.211

ARIFOV, U. A., KAZANSKIY, V. V., LUGOVSKOY, V. B., KAYUMOVA, Z. A.

"Integral and Subpulse Emissions Caused by Laser Radiation"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71, pp 599-602

Abstract: The nature of the emission of charged and neutral particles under the action of solid-state laser radiation on metal targets is investigated. It was found that the emission is determined both by the properties of the irradiated material and by the characteristics of the laser pulse. When a laser is operating in a free generation mode, the emission varies with an increase in the power of the radiation incident on the target. Initially, subpulse emission associated with the characteristics of the space-time structure of the radiation arises at small values of the power density. This appears in the form of short (0.1-1 μsec) current pulses which coincide in time with the laser subpulses. As the power is increased, an integral emission appears along with the subpulse emission that is caused by the total action of a large number of subpulses. The integral emission is in the form of an extended (0.1-2 μsec), continuous pulse with a characteristic

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ARIFOV, U. A., et al, Izvestiya Akademii nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71, pp 599-602

displacement relative to the maximum of the laser radiation. The emission pulses were divided into four types,depending on the form of their dependence on time: (1) subpulses of apparent thermoelectron origin; (2) short symmetric pulses with maxima coinciding with the maximum values of the laser intensity; (3) subpulses of complex form apparently formed through the superposition of pulses of the first and second types; (4) asymmetric pulses with a single undisplaced maximum (it is possible that these subpulses or some of them belong to the third type).

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1/2 058 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INTEGRAL AND PEAK EMISSION EVOKED FROM TUNGSTEN BY RUBY LASER RADIATION -U-

AUTHOR-(04)-ARIFOV, U.A., KAZANSKIY, V.V., LUGOVSKOY, V.B., MAKARENKO, V.A.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK UZBEKSKOI SSR, IZVESTIIA, SERIIA FIZIKO-MATEMATICHESKIKH NAUK, VOL. 14, NO. 2, 1970, P. 81-84

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TUNGSTEN, RUBY LASER, EMISSION SPECTRUM, HEAT CONDUCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1249 STEP NO--UR/0166/70/014/002/0081/0084

CIRC ACCESSION NO--AP0124901

UNCLASSIFIED

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820018-7"

2/2 058 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0124901

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL STUDY OF THE EMISSION CURRENTS EVOKED FROM TUNGSTEN TARGETS IN VACUUM UNDER THE ACTION OF FOCUSED RADIATION FROM A RUBY LASER OPERATING IN THE FREE RUNNING MODE. FOR TIME INTERVALS SIGNIFICANTLY EXCEEDING THE DURATION OF THE LASER EMISSION PEAK BUT SHORTER THAN THE PULSE DURATION, THE TOTAL ACTION OF A LARGE NUMBER OF PEAKS SHOULD CAUSE INTEGRAL HEATING OF THE TARGET SIMILAR TO THAT WHICH WOULD OCCUR IF THE SPATIAL DISTRIBUTION OF INTENSITY IN EACH PEAK WOULD COINCIDE WITH THE DISTRIBUTION FOR THE ENTIRE PULSE. IN THIS CASE, THE TARGET SHOULD EXHIBIT INTEGRAL EMISSION IN ADDITION TO THE PEAK EMISSION CHARACTERISTICS. THE INTEGRAL EMISSION SHOULD CORRESPOND TO THE SOLUTION OF THE HEAT CONDUCTION EQUATION AND IS OBSERVED IN THE FORM OF A CONTINUOUS PULSE WITH A DURATION COMPARABLE TO THE LASER PULSE DURATION. PREVIOUS STUDIES WITH NICKEL TARGETS YIELDED NO INTEGRAL EMISSION BEFORE TARGET VAPORIZATION, AND TUNGSTEN TARGETS WERE USED IN THE PRESENT CASE. EMISSION CURRENTS ARE SHOWN TOGETHER WITH THE LASER PULSES IN REPRODUCED OSCILLOGRAMS, AND IT IS DEMONSTRATED THAT THE INTEGRAL EMISSION CAN BE SATISFACTORILY DESCRIBED IN THE FRAMEWORK OF THE HEAT CONDUCTION THEORY AND THE RICHARDSON EQUATION.

FACILITY: AKADEMIIA NAUK UZBEKSKOI SSR, INSTITUT ELEKTRONIKI, TASHKENT, UZBEK SSR.

UNCLASSIFIED

UDC 621.378.525

USSR

ARIFOV, U. A., KAZANSKIY, V. V., LUGOVSKOY, V. B.

"Fluctuations of the Radiation Power Density of a Solid State Laser Near the Focal Plane of the Collecting Lens"

Tashkent, Izvestiya Akademii Nauk Uz SSSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1970, pp 59-62

Abstract: This article contains a description of a device which offers the possibility of isolating individual pinches from the total laser pulse and simultaneously recording their basic characteristics: power, energy, and magnitude of the effective area $S_{i_{eff}}$ in which the basic portion of the radiation energy is concentrated. The results of experiments run using this device are also discussed.

Cases with 1, 2, 3, 4, and 5 pinches were selected and their energy and time characteristics measured by oscillograms. These data were used to find the relative area $x_i = S_{i_{eff}}/S_0$, the relative power density $Y_i = (P_i/\overline{P}_i)(1/x_i)$, and the relative energy

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ARIFOV, U. A., et al, Izvestiya Akademii Nauk Uz SSSR, Seriya Fiziko-Matematicheskikh Nauk, No 3, 1970, pp 59-62

density $\gamma'' = (\mathcal{E}_i/\bar{\mathcal{E}}_i)\ (1/x_i)$ (here $S_i = 1.1$ mm^2 is the total area of the focal point obtained without a Kerr cell; P_i is the peak radiation power in the pinch; $\mathcal{E}_i$ is its energy; $\bar{P}_{ii}$ and $\bar{\mathcal{E}}_i$ are the mean values of the corresponding variables).

Comparison of the values of x and the energy values corresponding to them demonstrated that quite large values of $S_{i_{eff}}$ are observed with insignificant energy in the pinch. In addition, for single pulses the correlation coefficient $\rho_{x,\mathcal{E}} = 0.37$ indicates the existence of a positive statistical relation between the effective area and energy. The correlation coefficients for the effective area and energy density are 0.45 and 0.22 respectively. This indicates a negative relation of these variables, but this relation is not confirmed. The data obtained confirm the assumption of the causes of anomalous emission and low value of threshold energy for which destruction of the target material begins. It is possible that this also explains certain other observed phenomena determined by the pinch structure of laser radiation.

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USSR UDC 621.38

ARIFOV, U. A., KAZANSKIY, V. V., LUGOVSKOY, V. B., and MAKARENKO, V. A., Institute of Electronics, Academy of Sciences Uzbek SSR

"Integral and Spike Emission From Tungsten Produced by Ruby Laser Radiation"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-matematicheskikh Nauk, No 2, 1970, pp 81-84

Abstract: The article describes an experiment undertaken to detect integral emission from a tungsten target irradiated by the focused light of a ruby laser. Oscillograms of the emission currents are shown, tracing the character of the change in the emission with a growth in the power density. At first only spike emission can be seen, corresponding to the maximum laser intensity; then integral emission can be seen along with the spike emission; then the integral emission becomes more pronounced, and a characteristic shift in its maximum relative to the maximum radiation intensity can be seen. Target tem-

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ARIFOV, U. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-matematicheskikh Nauk, No 2, 1970, pp 81-84

perature variation curves are also shown, one of the curves being constructed according to the integral emission current from the Richardson equation, the other curve calculated from a solution of the heat-conduction equation according to the form of the laser pulse. A qualitative study of the resultant oscillograms indicates a decrease in the contribution of spike emission with an increase in the initial target temperature. The results indicate that integral emission is satisfactorily described within the limits of heat conduction theory and the Richardson equation.

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USSR

UDC 621.378.535

ARIFOV, U. A., KAZANSKIY, V. V., and LUGOVSKOY, V. B., Institute of Electronics, Academy of Sciences Uzbek SSR

"Light Flux Fluctuations in the Bounded Region of the Cross Section of a Laser Beam"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-matematicheskikh Nauk, No 2, 1970, pp 53-56

Abstract: A previous article by the authors noted the possible influence which peculiarities of the spatial distribution of the radiation intensity of a ruby laser have on the character of charged particle emission. The authors studied power density fluctuations in individual radiation spikes of a laser working in a free oscillation mode. In an arbitrarily chosen region of the cross section of a laser beam fluctuations in the light flux may be due to the character of the time dependence of the radiation power, as well as to variations in the form of the spatial intensity distribution during a laser pulse. It is assumed in the article that in each spike the radiation intensity is rep-

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USSR

ARIFOV, U. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-matematicheskikh Nauk, No 2, 1970, pp 53-56

resented as the product $X_i(x,y)\cdot T_i(t)$, where T_i characterizes the time dependence of the radiation power in the i-th spike, given invariable spatial distribution X_i. In this case the quantity $\eta_i(x_k,y_k)$ equal to the ratio of flux I_{iD}, bounded by the diaphragm D, to total flux I_i will be defined as

$$\eta_i = \frac{X_{iD}}{X_i} \cdot \frac{S_D}{S}$$

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USSR

ARIFOV, U. A., et al., Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-matematicheskikh Nauk, No 2, 1970, pp 53-56

The following four possible cases of the spatial distribution of laser radiation intensity are considered:

1. The radiation is uniformly distributed in region S and identical for all spikes.

2. The intensity distribution is identical for all spikes but is a function of certain coordinates.

3. The radiation in each spike is distributed uniformly in the bounded region $S_i < S$.

4. The radiation in the spikes is not identically distributed.

It is possible to establish the type of radiation character and to evaluate fluctuations in the flux density of individual spikes according to the form of an experimentally obtained distribution. The article describes such an experiment and discusses the results.

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Pathology

USSR UDC 617.7-.681.092.4.001.57:519.24

AVETISOV, E. S., BUNIN, A. Ya., LUKOVSKOY, V. M., and KOZLOVA, L. P.,
Moscow Scientific Research Institute of Eye Diseases imeni Gel'mgol'ts

"Possibility of Mathematical Modeling of the Process of Change in Intraocular Pressure in Primary Glaucoma"

Moscow, Vestnik Oftal'mologii, No 5, 1971, pp 10-16

Abstract: The proposed mathematical model of change in intraocular pressure (IOP) in different phases of primary glaucoma is based on two assumptions: (a) the central factor in the pathogenesis of the disease is the progressive death of functional elements of the optic nerve and retina caused by metabolic change combined with high IOP; (b) the metabolic rate in eye tissues and level of IOP are related in such a way that the former may increase when the latter rises slightly but decrease with further rise in IOP. Hence a rise in IOP may, with respect to the metabolic rate, be either compensatory or aggravating in nature. The dynamics of change in the average level of IOP over a fairly long period is useful for the early detection of glaucoma and objective evaluation of the course of the disease. For example, if tonograms obtained over a period of 1 to 1 1/2 years reflect a progressive rise in the average level of IOP, the presence of glaucoma can be considered confirmed. If the 1/2

USSR

AVETISOV, E. S., et al., Vestnik Oftal'mologii, No 5, 1971, pp 10-16

diagnosis of glaucoma was established previously, the continued rise is an indication that the course of the disease is unfavorable.

1/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THE ROLE OF TONOMETRY IN EARLY DIAGNOSIS OF GLAUCOMA -U-

AUTHOR-(03)-AVETISOV, E.S., KOZLOVA, L.P., LUGOVSKOY, V.M.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK OFTAL'MOLOGII, 1970, NR 2, PP 41-44

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--EYE DISEASE, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS

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PROXY REEL/FRAME--1986/0834 STEP NO--UR/0357/70/000/002/0041/0044

CIRC ACCESSION NO--AP0102796

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0102796

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TONOGRAMS TAKEN IN PERSONS WHO HAD BEEN UNDER OBSERVATION FOR 2-8 YEARS IN CONNECTION WITH SUSPECTED GLAUCOMA WERE USED IN EVALUATING THE ROLE OF TONOMETRIC INVESTIGATIONS FOR AN EARLY DIAGNOSIS OF GLAUCOMA. ONE GROUP INCLUDED 20 SUBJECTS WITH THE DIAGNOSIS OF GLAUCOMA VERIFIED IN THE COURSE OF OBSERVATION, THE OTHER ONE EMBRACING 20 PERSONS IN REGARD TO WHOM THE DIAGNOSIS OF GLAUCOMA DID NOT FIND CONFIRMATION. TO STATISTICAL ANALYSIS WERE SUBJECTED TONOGRAMS OBTAINED IN PRIMARY DIURNAL TONOMETRY COVERING A PERIOD OF 5 DAYS. THE LEVEL OF INTRAOCULAR TENSION AND ITS DAILY AND WEEKLY RANGE WERE STUDIED. A TOTAL OF 400 TONOGRAMS, 200 FOR EACH GROUP, WERE SCRUTINIZED. THESE INVESTIGATIONS DEMONSTRATED THAT IN BORDER LINE CASES DIURNAL TONOMETRY ALONE CANNOT BE REGARDED A SUFFICIENTLY RELIABLE CRITERION FOR AN EARLY DIAGNOSIS OF GLAUCOMA.

UNCLASSIFIED

USSR UDC 535.3

LUGUVOY, V. N., and PROKhOROV, A. M., Physical Institute imeni P. N. Lebedev, Academy of Sciences of the USSR

"Theory of the Propagation of Powerful Laser Radiation in a Nonlinear Medium"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 111, No 2, Oct 73, pp 203-247

Abstract: Only conditions of Kerr nonlinearity are considered. The authors have previously reported on the multi-focus concept of laser beam propagation above the critical point in a nonlinear medium. Since the distance to a focus is determined by the power of the incident beam and this power is constantly changing in short-duration laser pulses, the foci travel at a speed dependent on the time characteristics of the pulse. Mathematical analysis of this relationship shows good correlation with experimental observation of the "lifetime" of the bright filaments which are actually the tracks of moving foci.

Considering the time characteristics of the various types of Kerr nonlinearities and the durations of the laser pulses involved, a parabolic equation for the complex amplitude of the electric field under the conditions of greatest practical interest is derived from Maxwell's equation. The parabolic equation may require significant correction under conditions of substantial saturation of the Kerr nonlinearity.

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USSR

LUGUVOY, V. N. and PRCKhOROV, A. M., Uspekhi Fizicheskikh Nauk, Vol 111, No 2, Oct 73, pp 203-247

For an axially symmetric beam, it can be demonstrated that the original gaussian distribution will be modified in a nonlinear medium if the beam power is greater than the critical value, a factor which has been ignored in several publications, including E. L. Kerr, Physical Review, A 4, page 1195, 1971.

The occurrence of a multi-focus structure is demonstrated by the numerical solution of the equilibrium state problem for laser pulses with a typical duration of 10^{-8} seconds or less. These calculations yield the action locations of the foci. Three-photon absorption, 2-photon absorption, and induced Raman emission in the forward direction are considered. The authors note that the use of an approximation of geometric objects, as by A. V. Gurevich, is not valid past the first focus.

The motion of foci generated by brief laser pulses leads to local effect, particularly at "turning" points. Depending on the speed of focus movement, local heating effects can lead to a breakdown of the focus structure.

Under certain conditions, ultra-short pulses of induced Raman emission in the reverse direction can be generated; these have been observed experimentally.

The spectra of pulses in a nonlinear medium are subject to several effects which widen them, including phase modulation proportional to the path length

LUGUVOY, V. N., and PROKhOROV, A. M., Uspekhi Fizicheskikh Nauk, Vol 111, No 2, Oct 73, pp 203-247

traveled by the pulse and the rate of change of the index of refraction of the medium, a resulting amplitude modulation which can occur if the dispersion of the linear part of the index of refraction becomes significant, and expansion of the spectrum of the field of moving foci.

Although the calculations in this article involve pulses of a limited class, they can be extended to cover a broader range. Consideration of inertia in the Kerr effect for picosecond pulses would lead to experimental results that have not yet been observed. If the nonlinearity of absorption were very slight, Maxwell's equation would have to be used, leading to a very difficult calculation. However, a rough approximation indicates that the multi-focus structure would still be developed.

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USSR UDC: 521.396.677(088.8)

SHAVEL', M. A., LUK, L. N., Minsk Radio Plant

"A Device for Orienting an Antenna With Respect to Azimuth, Angle of Elevation and Polarization"

USSR Author's Certificate No 262998, filed 29 Jun 68, published 10 Jun 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B99 P)

Translation: The proposed device contains an azimuth rotation mechanism fastened on a fixed base, a mechanism for rotation with respect to angle of elevation mounted on a disc on the output shaft of the azimuth rotation mechanism, and a mechanism for rotating the plane of polarization. In order to simplify remote control of the antenna, the output shafts of the mechanism for rotation with resepct to angle of elevation and the mechanism for rotating the plane of polarization are coaxial. The shaft of the antenna chassis is kinematically connected by a bevel gear couple to the output shaft of the mechanism for rotating the plane of polarization, and movably mounted inside the output shaft of the mechanism for rotation with respect to angle of elevation. The mechanism for rotating the plane of polarization is fastened to a disc on the output shaft of the mechanism for azimuth rotation.

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1/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--TESTING OF THE PLASTIC COATING ON METAL SURFACES OF APPARATUS -U-

AUTHOR-(03)-LUKACH, YU.YE., PALEVSKIY, V.V., GONCHARENKO, V.V.

COUNTRY OF INFO--USSR

SOURCE--KHIM. PROM. UKR. 1970, (2), 48-50

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--PLASTIC COATING, ELECTRIC PROPERTY, EPOXY RESIN, METAL CONTAINING POLYMER, NICKEL, CURING AGENT, METAL COATING, TEST METHOD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0038 STEP NO--UR/0436/70/000/002/0048/0050

CIRC ACCESSION NO--AP0132333
UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0132333

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GREEN EPOXY ENAMEL E-5, FILLED WITH 43-66PERCENT NI DUST AND CURED WITH 10PERCENT H SUB2 N(CH SUB2) SUB6 NH SUB2 SOLN. IN ALC., WAS READILY DEPOSITED BY SPRAYING ON LAB. APP. THE HARDENED COATING (AT 85-120DEGREES) HAD GOOD ELEC. PROPERTIES.

UNCLASSIFIED

Psychiatry

UDC 616.8:313.13(47)

USSR

MOROZOVA, T. G., and LUKACHER, G. Ya., Main Administration for Therapeutic and Prophylactic Care, Ministry of Health USSR, and Central Scientific Research Institute of Forensic Psychiatry imeni Serbskiy Ministry of Health USSR, Moscow

"Structure of Neurological Morbidity in the USSR"

Moscow, Zhurnal Nevropatologii i Psikhiatrii imeni S. S. Korsakov, Vol 70, No 7, 1970, pp 1060-1066

Abstract: An analysis is presented of the incidence of neurological diseases in the USSR, based on reports of visits to doctors, clinical cases, and hospitalizations for the USSR as a whole and for the union republics, oblasts, krays and autonomous republics of the RSFSR and the cities of Moscow and Leningrad for 1964 and 1965. According to these data, 3.49% of persons 14 years old or older suffered from neurological diseases in 1965. For the USSR as a whole, diseases of the peripheral nervous system were most common (48%), followed by neurovascular disorders (18.4%), neuroses (18.2%), and others CNS diseases (12.9%). Diseases of the peripheral nervous system were also highest in frequency in each of the union republics. In all of the union republics, disorders caused by atherosclerosis predominated among patients suffering from vascular diseases of the CNS. Such

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cases were more than twice as numerous as those caused by hypertension. Neuroses ranged from 5.6% (in the Kazakh SSR) to 33.0% (in the Azerbaydzhan SSR) of the neurological diseases. Cases of epilepsy (without psychoses) were twice as numerous in the Armenian SSR (5.2%) as in most of the other union republics and in the USSR as a whole (2.4%).

USSR UDC 629.7.036.3:536.46:531.7

IVLIYEV, A. V., KSHNYAKIN, N. A., LUKACHEV, V. P., and UGLOV, B. A.

"Measurement of the Normal Combustion Rate by Means of an Automatic Electronic Device"

Tr. Kuybyshev. Aviats. In-t, No 56, 1973, pp 17-23 (from Referativnyy Zhurnal--Aviatsionnyye i Raketnyye Dvigateli, No 10, 1973, Abstract No 10.34.26. Resume)

Translation: On the basis of a procedure developed by the authors for determining the surface area of the front of a flame propagating in a horizontal tube open at the end at which the combustible mixture is ignited, an automatic electronic device is proposed which permits measurement of the apparent rate of movement of the flame in relation to the length of the tube wall, as well as the length of projection of the flame front along the tube axis, and makes it possible, by means of a stipulated procedure, to calculate the normal rate of combustion. An estimate of the measurement error was conducted, which showed that the proposed device decreases the measurement errors by two orders of magnitude in comparison to the method of slow-motion photography. With the use of this method, the labor intensity of determination of the normal rate of flame propagation is considerably decreased. 4 figures. 10 references.

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USSR

UDC 911.3.613.11

SKOROBOGATOVA, A. M., PARAMONOV, Yu. A., LUKACHEV, V. V., ZAHORSAKIN, V. A., SHILOV, Yu. M., GRISHCHENKO, K. F.

"The Significance of Some Factors in Polar Regions for the Formation of Adaptation Processes"

V sb. Akklimatiz, i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 66-68 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No. 1.36.43 by V. Zhadovskaya)

Translation: This work includes data gathered in the Antarctic, Central Arctic Basin, and experimental research in a cooling chamber. The parameters studied were: arterial pressure, pulse rate, plethysmogram, rheogram, and skin temperature in 112 polar residents. The most marked shifts occurred in new arrivals or in those who returned after an absence of 5-6 years; as well as in those polar residents with high arterial pressure. In conditions where volume charge is increased and relationship of atmospheric elements is altered, there is a decrease of skin sensitivity to low temperature. A disturbance of the balance between sympathetic and parasympathetic regulation of cardiovascular activity is also observed.

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USSR UDC: [546.623:546.723:546.46:546.732]:54-36

CHALYY, V. P. and LUKACHINA, YE. N., Institute of General and Inorganic Chemistry, Academy of Sciences Ukrainian SSR

"Formation of Magnesium Ferroaluminate with Additions of Cobalt From Metal Hydroxides"

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8, No 4, Apr 72, pp 737-740

Abstract: The conditions for the formation of Mg ferroaluminate with Co additions in the quaternary hydroxide system $Mg(OH)_2$-$Co(OH)_2$-γ-AlOOH-α-FeOOH have been studied. The content of the components recalculated to oxides (wt.%) is given as: MgO-18.00; CoO-0.56; Al_2O_3-10.12; Fe_2O_3-71.32. The study included the effect of pH of the mother solution, temperature and duration of treatment on the composition and properties of the hydroxide ferrite powders, and the annealing conditions on the properties of the products made from the powders. Use was made of chemical analyses, pH measurements, differential thermograms, thermogravimetry, x-ray diffraction phase analyses, and magnetic measurements to study the conditions of coprecipitation of Mg, Co(II), Al and Fe(III) hydroxides, the structural transformations following heat treatment of precipitates, and the magnetic properties of products from hydroxide-type ferrite powders of given com-

USSR

CHALYY, V. P., et al, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8, No 4, Apr 72, pp 737-740

positions. The analytical data and results are reflected in tables. (1 illustration, 3 tables, 3 bibliographic references).

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USSR

UDC 632.95

KAGAN, YU. S., LUKANEVA, A. M.

"New Experimental Data on Action of DDT on Certain Physiological Systems of Warmblooded Animals"

Sb. Tr. N.-I. In-t Gigiyeny Truda i Profzabolevaniy, GruzSSR (Collection of Works of Scientific Research Institute of Labor Hygiene and Occupational Diseases, Georgian SSR), 1970, Vol 12, pp 207-210 (from RZh-Khimiya, No 18, 25 Sep 70, Abstract No 18N603, by P. V. Popov)

Translation: From new data obtained in experiments on laboratory animals, small amounts of DDT that can enter the organism from its environment cause harmful changes in DDT-sensitive systems of the organism.

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UDC 620.197.6

USSR

KARLASHOV, A. V., GAYNUTDINOV, R. G., and LUKANIN, S. N., Kiev Institute of Civil Aviation Engineers

"Determination of Electrolyte Residues in the Gap of a Welded and Anodized Joint"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 102-103

Abstract: Tests were conducted to determine if the concentration of sulfuric acid in the residue, residing in the gap of a spot-welded sample after anodization was high enough to cause corrosion damage. Using sheet samples of D16-AT alloy, an angle piece was spot welded to a flat sample which was then anodized. The samples were then washed with distilled water which was tested for its electroconductivity and compared to a standard sulfuric acid electrolyte. It was found that electrolyte concentration in the weld gap was less than the standard as well as less than the amount of acid on the open anodized surfaces. The conclusion was that aluminum alloys and their weld joints can be anodized without danger of corrosion damage occurring in the weld. 3 figures, 1 table, 4 bibliographic references.

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LUKANIN, V.

STUDY OF THE NOISE OF A DIESEL ON A TRACTOR

Yu. Doykus, V. Lukanin, V. Efros (Kaunas)

Investigations have shown that the noise in the operator's seat of a tractor is radiated by the panels of the cab, excited by forces developed as the engine operates, and also as a result of propagation of sound energy through the structures of the tractor.

Studies were performed using type MTZ-50 tractors, equipped with water cooled (D-50) and air cooled (D-37e) engines. The specifics of arrangement of the engine on the tractor include rigid mounting on motor mounts and flange connection to the transmission of the tractor.

Vibrations can be decreased by making structural changes to the method of connection of the engine to the transmission.

Figure 1 shows the results of measurement of vibrations at a point on the floor of the cab. Spectrum 1 was produced with standard connection of the engine to the transmission, spectrum 2--with the engine disconnected, spectrum 3--shows vibrations of the engine itself.

The noise in the operator's seat was 104 db and 98 db respectively. The engine in all cases operated at 1800 rpm without load.

This figure shows the expediency of reducing the vibration propagating from the engine to the cab.

Figure 1.

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SO: NASA Technical Translation NASA TT F-694 May 1972

USSR

UDC 632.95

GAR, K. A., UNTERBERGER, V. K., BEZUGLIY, S. F., LUKANINA, V. S., AND VOLKOV, V. N., All-Union Scientific Studies Institute of Chemical Compounds for the Protection of Plants

"Insecticide Formula"

Author's Certificate No 213452, filed 4 Apr 66, published 2 Jun 72 (from Referativnyy Zhurnal -- Khimiya, No 8(II), 1973, Abstract No 8N480P by T. A. Belyayeva)

Translation: The insecticide trichloforl-5 contains from 4-15% trichlorometaphos-3 (I), 85-96% high purity unfiltered mineral oil, and 0-6% of the emulsifier OP-4. For example, 92% of the light unfiltered oil having an unsulfornated residue of 93%, 5% of (I), and 3% OP-4. The order of the relative effectiveness of the oleophoses is as follows -- olemetaphos, trichlorol-5, and preparation No 30 -- relative to the wintering phase of the California scale insect. Trichlorol -5 in a 2% concentration showed a mortality of 92.4% of the pests.

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USSR

UDC 632.95

POSLAYSKIY, YU. N., GAR, K. A., LUKANINA, V. S., and BEZUGLYY, S. F.

"Polydofen"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 34-42 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N453 by T. A. Belyayeva)

Translation: Polydofen (I) is an insecticidal preparation containing 40% polychlorocamphene, 20% DDT, solvents and an emulsifier. Results are given for tests of I and other combined preparations of DDT with chlorinated terpenes in various regions of the USSR during aerial and tractor spraying of cotton. Timing, consumption rates and application conditions are given for I on cotton against the bollworm.

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USSR UDC 632.95

LUKANINA, V. S., BEZUGLYY, S. F., MEL'NIKOV, N. N., IVANOVA, S. N., GOROKHOVA, V. V., KOSTYUKOVA, M. I., and KURBATOVA, T. I.

"Emulsifiable Concentrate of 5,4'-Dichlorosalicylanilide -- An Effective Molluscicide"

V sb. Khim. sredstva zashchity rast. (Chemical Plant Protectants -- collection of works), vyp 1, Moscow, 1970, pp 61-65 (from RZh-Khimiya, No 13, 10 Jul 72, Abstract No 13N498 by I. Pil'nenshteyn)

Translation: The use of 5,4'-dichlorosalicylanilide (I) in the form of a 10-percent emulsion concentrate (EC) increases its molluscicidal activity 8-9 fold over tha of an ammonia solution. I is 800-900 times more effective than $CuCO_4$. At a $1:9.10^6$ dilution I provides 100% destruction of molluscs. In the applied concentration I is harmless for warm-blooded animals and grass cover. There is no change in the physicochemical properties and molluscicidal activity of the EC of I when it is stored in an airtight container for two years. The 10% EC of I is recommended for application in agriculture in doses of 1-5 kg/ha.

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USSR

UDC 632.95

LUKANINA, V. S., and FETISOVA, I. A.

"Determination of Polychlorocamphene and DDT in a 60% Emulsified Concentrate of Polychlorocamphene with DDT"

V sb. Khim. sredstva zashchity rast. (Chemical Agents for Plant Protection -- collection of works), vyp 1, Moscow, 1970, pp 83-88 (from RZh-Khimiya, No 11, Jun 72, Abstract No 11L400)

Translation: Polychlorocamphene is determined in a polydophen preparation by a photocolorimetric method based on the property of polychlorocamphene of producing a strong yellow color with thiourea in an alkaline medium. The accuracy of determination of polychlorocamphene is ±1%. The DDT concentration in the compound is determined from the total chlorine by Schoenher ignition of the compound in oxygen.

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1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--UNIMOLECULAR AND BIMOLECULAR RECOMBINATION IN KCL:IN,AG AND KBR:IN CRYSTALS -U-

AUTHOR-(04)-LEYMAN, V.I., DENKS, V., LUKANTSEVER, N.L., SAVIKHIN, F.A.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1455-61

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--REACTION KINETICS, POTASSIUM CHLORIDE, BROMIDE, INDIUM, SILVER, THERMOLUMINESCENCE, REACTION MECHANISM, IONIZATION, RECOMBINATION LUMINESCENCE, ELECTRON HOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0169 STEP NO--UR/0181/70/012/005/1455/1461

CIRC ACCESSION NO--AP0129425

UNCLASSIFIED

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0129425
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS WAS INVESTIGATED OF ELECTRON HOLE PROCESSES IN THE CRYSTALS KCL-IN, AG AND KBR-IN IN EXCITATION WITH THE RADIATION IN THE REGION OF THE C BAND OF ABSORPTION OF IN PRIME POSITIVE CENTERS. IN WEAK EXCITATION, THE KINETICS OF RECOMBINATION EXCITATION IS UNIMOL.; I.E., ELECTORNS RECOMBINE WITH THE SAME IN PRIME2 POSITIVE CENTERS FROM WHICH THEY WERE REMOVED IN IONIZATION OF IN PRIME POSITIVE CENTERS. IN THIS UNIMOL. MECHANISM, LIGHT STORED BY THE PHOSPHOR IS PROPORTIONAL TO THE INTENSITY OF EXCITATION, E, THE RATIO OF THE PEAKS OF THERMOLUMINESCENCE IS INDEPENDENT OF E, AND THE APPLICATION OF AN ELEC. FIELD LEADS TO AN INCREASE IN THE MAT. OF STORED LIGHT. FACILITY: INST. FIZ. ASTRON., TARTU, USSR.

UNCLASSIFIED

1/2 047 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--STRUCTURE SENSITIVE NATURE OF LUMINESCENCE QUENCHING OF INDUCED ACTIVATOR COLOR CENTERS IN NACL,AG CRYSTAL PHOSPHORS -U-

AUTHOR-(02)-LUKANTSEVER, YU.L., ARAPOV, B.A.

COUNTRY OF INFO--USSR

SOURCE--OPT. SPEKTROSK. 1970, 28(3), 498-501

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL PHOSPHOR, COLOR CENTER, LUMINESCENCE QUENCHING, SODIUM CHLORIDE, SILVER, THERMAL EFFECT, RADIATION EFFECT, CRYSTAL ELECTRIC CONDUCTIVITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1431 STEP NO--UR/0051/70/028/003/0498/0501

CIRC ACCESSION NO--AP0118420

UNCLASSIFIED

2/2 047 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118420

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. INDUCED LUMINESCENCE (THE LUMINESCENCE WAS EXCITED BY X RAY IRRADN.) QUENCHING OF B, AND C COLOR CENTERS WAS STUDIED IN NACL-AG CRYSTALLOPHOSPHORS UNDER THE EFFECT OF DIFFERENT FACTORS THAT CHANGE THE CRYST. LATTICE, SUCH AS THE EFFECT OF CA, AND PB ADMIXTS. IN THE LATTICE AND THE EFFECT OF RADIATIONAL THERMAL TREATMENT OF CRYSTALS. THE THERMAL TREATMENT CAUSED THE DISTORTION OF COLOR CNETERS. EXCITATION, AND ABSORPTION SPECTRA OF PURE CRYSTALLOPHOSPHORS, OF CRYSTALLOPHOSPHORS WITH PB AND CA ADMIXTS., AND OF THERMALLY TREATED CRYSTALLOPHOSPHORS ARE SHOWN. THE LINE POSITIONS DID NOT SHIFT; THIS MEANS THE STRUCTURE OF THE COLOR CENTER WAS NOT CHANGED BY THESE FACTORS. THE OCCURRING CHANGES AFFECTED THE WHOLE CRYST. LATTICE. THE HYPOTHESIS THAT THE LUMINESCENCE QUENCHING WAS DUE TO AR IONIC MECHANISM (HARD RADIATION EXCITED LUMINESCENCE CENTERS INTERACT WITH THE DEFECTS OF THE LATTICE) WAS CONFIRMED BY THE SIMULTANEOUS TEMP. INDUCED QUENCHING OF THE LUNINESCENCE OF B CENTERS AND BY THE IONIC COND. OF NACL-AG CRYSTALLOPHOSPHORS. FULL THERMALLY INDUCED QUENCHING OF B CENTERS OCCURRED AT 450DEGREES, THE TEMP. AT WHICH THE ELECTROCOND. OF THE CRYSTAL IS MOST AFFECTED.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--MECHANISM OF THE IGNITION AND EXTINCTION OF X RAY LUMINESCENCE OF ALKALI HALIDE CRYSTAL PHOSPHORS -U-

AUTHOR-(02)-LUKANTSEVERE, YU.L., MUMINOV, R.M.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTROSK. 1970, 12(3), 455-9

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CRYSTAL PHOSPHOR, LUMINESCENCE SPECTRUM, X RAY IRRADIATION, ALKALI METAL HALIDE, RADIATION INTENSITY, LUMINESCENCE QUENCHING, FREE ELECTRON, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1489 STEP NO--UR/0368/70/012/003/0455/0459

CIRC ACCESSION NO--AP0118476

UNCLASSIFIED

2/2 031

CIRC ACCESSION NO--AP0118476

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF KINETICS OF THE IGNITION AND EXTINCTION OF TRANSITORY AND PROTRACTED COMPONENTS OF X RAY LUMINESCENCE IN A SERIES OF ALKALI HALIDE CRYSTAL PHOSPHATES AND STUDY OF SPECTRA OF THESE COMPONENTS WERE PRESENTED. THE METHOD WAS DEVELOPED OF SIMULATNEOUS REGISTRATION OF INTENSITY OF BOTH LONG (I SUBD) AND SHORT TERM (I SUBK) PARTS OF X RAY LUMINESCENCE. SEPN. AND REGISTRATION OF BOTH I SUBK AND I SUBD PARTS OF X RAY LUMINESCENCE OF THE IGNITION WAS ACCOMPLISHED BY USING FREQUENCY MODULATED 50,HZ X RAY EXCITATION IN COMBINATION WITH ELECTRONIC OSCILLOGRAPH 1,5M WITH D.C. AMPLIFIER. THE FOLLOWING INORG. SYSTEMS WERE USED FOR THIS STUDY: KCL,IN, NACL,AG, KCL,TL, KBR,TL, AND KBR,IN. RELAXATION PROCESSES WERE INVESTIGATED AT 300-500DEGREESK. DEPENDENCE ON TEMP. OF I SUBK AND I SUBD OF STATIONARY X RAY LUMINSCENCE IN NACL,AG SYSTEM WAS ALSO STUDIED AND ACTIVATION ENERGIES OF TEMP. IGNITION OF I SUBK AND EXTINCTION OF I SUBK AND I SUBD WERE DETD. INFLUENCE OF FREE ELECTRONS IN ALKALI HALIDE CRYSTAL PHOSPHATES LATTICE ON IGNITION OF I SUBK AND I SUBD COMPONENTS WAS STUDIED BY USING KCL,AG SYSTEM. THE LUMINESCENCE APPEARS WHEN RECOMBINATION OF FREE ELECTRONS WITH AN IMPERFECTIONS AT AG PRIME POSITIVE OCCURRED.

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820018-7"

1/2 019 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ROENTGEN RADIOLOGICAL EXAMINATION OF DIFFUSE LIVER LESIONS -U-

AUTHOR-(03)-NOSOVA, YE.T., TAYTS, N.S., LUKASH, L.K.

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 6, PP 84-87

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GOLD ISOTOPE, LIVER, HEPATITIS, CIRRHOSIS, RADIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1756 STEP NO--UR/0475/70/000/006/0084/0087

CIRC ACCESSION NO--AP0129124
UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 019

CIRC ACCESSION NO--AP0129124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE REPORTED OF THE USE OF CHOLEGRAPHY AND AU PRIME196 LIVER SCANNING IN 73 PATIENTS SUFFERING OF CHRONIC HEPATITIS AND LIVER CIRRHOSIS. IT IS CONCLUDED THAT SUCH COMPLEX EXAMINATION WIDENS THE POSSIBILITIES OF A MORE THOROUGH STUDY OF LIVER PATHOLOGY. FACILITY: OTDEL LECHEBNOGO PITANIYA INSTITUTA PITANIYA AMN SSSR.

UNCLASSIFIED

USSR

UDC 539.374

PROSKURINA, V. M., LUKASH, P. A.

"Calculation of Hollow Shells of Nonlinearly Elastic Materials Under Small Deflections"

Sb. tr. Mosk. inzh.-stroit. in-t (Collection of Works of Moscow Structural Engineering Institute), 1970, No. 84, pp 11-17 (from RZh-Mekhanika, No 9, Sep 71, Abstract No 9V450)

Translation: Assuming that the material of the shell conforms to the equations of the theory of small elastic-plastic deformations under the polynomial simplification

$$\sigma_i = Ae_i + Be_i^2 + Ce_i^3 + \ldots$$

and using statistical and kinematic hypotheses of the geometrically linear theory of thin hollow shells, the authors compile an expression for the frictional of the total energy of the shell. On this basis and using the Ritz method for two variable parameters, the authors make an approximate examination of the deformation of a hollow spherical shell loaded by pressure that is square in plan and supported along a contour. V. I. Rozenblyum.

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1/2 009 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DEPENDENCE OF THE CAST IRON FLOW FACTOR ON THE GEOMETRY OF CASTING CHANNELS OF A MOLD -U-

AUTHOR-(04)-PETRICHENKO, A.M., GLIZER, Z.KH., GOLDMAKHER, P.E., LUKASHCHUK, T.I.

COUNTRY OF INFO--USSR

SOURCE--LITEINOE PROIZVOD. 1970, 2, 30-1

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CAST IRON, FOUNDRY TECHNOLOGY, FERROUS LIQUID METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/1376 STEP NO--UR/0128/70/002/000/0030/0031

CIRC ACCESSION NO--AP0116825

UNCLASSIFIED

UNCLASSIFIED

2/2 009 PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116825

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPTL. MOLD ALLOWING A SIMULTANEOUS OUTFLOW OF MOLTEN IRON THROUGH 4 CHANNELS HAS BEEN USED TO DET. THE INFLUENCE OF THE SHAPE OF THE CHANNEL CROSS SECTION ON THE FLOW FACTOR. A FLAT CHANNEL WITH A PLANE UPPER SURFACE AND A CYLINDRICAL BOTTOM ONE, FORMED WITH A LARGE RADIUS, SHOWS THE HIGHEST FLOW FACTOR (0.61-0.68), LEAST AFFECTED BY VARIATIONS OF THE METAL TEMP. EXPTS. WITH RECTANGULAR SECTIONS SHOW THAT MAX. FLOW IS OBTAINED WHEN THE WIDTH TO HEIGHT RATIO IS 3:1. APPROACHING A SQUARE CROSS SECTION CAUSES THE FLOW FACTOR TO FALL.

UNCLASSIFIED

USSR

BELOUSOV, B. N., LUKASHENKO, A. N., and PANCHENKOV, A. N.

"Lifting Surface in Nonstationary Flow Near the Screen"

Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Equipment of the Air Fleet -- Republic Interdepartmental Collection of Scientific and Technical Works), 1970, vyp. 18, pp 3-11 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B369 by V. I. Kholyavko)

Translation: By the acceleration potential method the authors consider the general solution of the linearized problem of the harmonic oscillation of a thin slightly curved lifting surface in a restricted fluid flow. The solution is presented in the form of three terms, two of which (solution involving the presence of a velocity distribution discontinuity on the lifting surface, and solution describing inertial motion) are regular, and one is singular. For a high-aspect-ratio wing ($\lambda \to \infty$), with application of the Prandtl scheme and approximation of vortex intensity along the chord by an expression taken from the plane solution the nonstationary problem reduces to two one-dimensional integral equations. An example is given of the calculation of nonstationary wing motion for the case of elliptic span load

1/2

USSR

BELOUSOV, B. N., et al., Samoletostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb. (Aircraft Construction and Equipment of the Air Fleet -- Republic Interdepartmental Collection of Scientific and Technical Works), 1970, vyp. 18, pp 3-11 (from RZh-Mekhanika, No 1, Jan 71, Abstract No 1B369 by V. I. Kholyavko)

distribution. In comparison with classical theory, an additional term of order λ^{-1} is obtained in the stationary part of the lift coefficient for a nonplanar wing. It is assumed that this term takes into account the influence of aspect ratio on zero-lift angle.

Acc. Nr: AP0034074 Abstracting Service: CHEMICAL ABST. 4-70

Ref. Code: UR 0078

71424p Saturated vapor pressure and entropies of mixing of calcium chloride calcium fluoride melts. Lukashenko, E. E.; Reutova, G. A. (Krasnoyarsk. Inst. Tsvet. Met., Krasnoyarsk, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 244–5 (Russ). Fused $CaCl_2$–CaF_2 system shows a pos. deviation from Raoult's law. Satd. vapor pressure of the system with compn. changes from 90 to 45 mole % $CaCl_2$ changed from 5.77 $\times 10^{-3}$ to 1.77×10^{-4} torr. The partial molar entropy of mixing for mixts. contg. 90 mole % CaF_2 is: for $CaCl_2$ 0.971 and for CaF_2: 5.548 cal/mole-degree and for mixts. contg. 55 mole % CaF_2 for $CaCl_2$ 3.088 and for CaF_2 1.832 cal/mole-degree. The excess integral entropy of mixing of melts reaches +0.9 cal/mole-degree.

HMJR

18

REEL/FRAME
19710717

UDC 669.721'882.049.6

USSR

KURBATOV, V. L. and E. YE. LUKASHENKO

"The Mechanism of the Distillation of Chlorides of Magnesium and Potassium From Capillary Porous Solids in Vacuum"

V. sb. Vakuumn. protesessy v tsvetn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, pp 162-166 (from Referativnyy Zhurnal - Metallurgiya, No 6, Jun 71, Abstract No 6G184)

Translation of Abstract: The kinetics were studied of the sublimation of $MgCl_2$ and Kcl from mixtures of finely porous graphite and spongy Ti in vacuum. According to the experimental data, thermodynamic functions were calculated for Chlorides adsorbed from graphite and Ti. (Three illustrations, 6 references).

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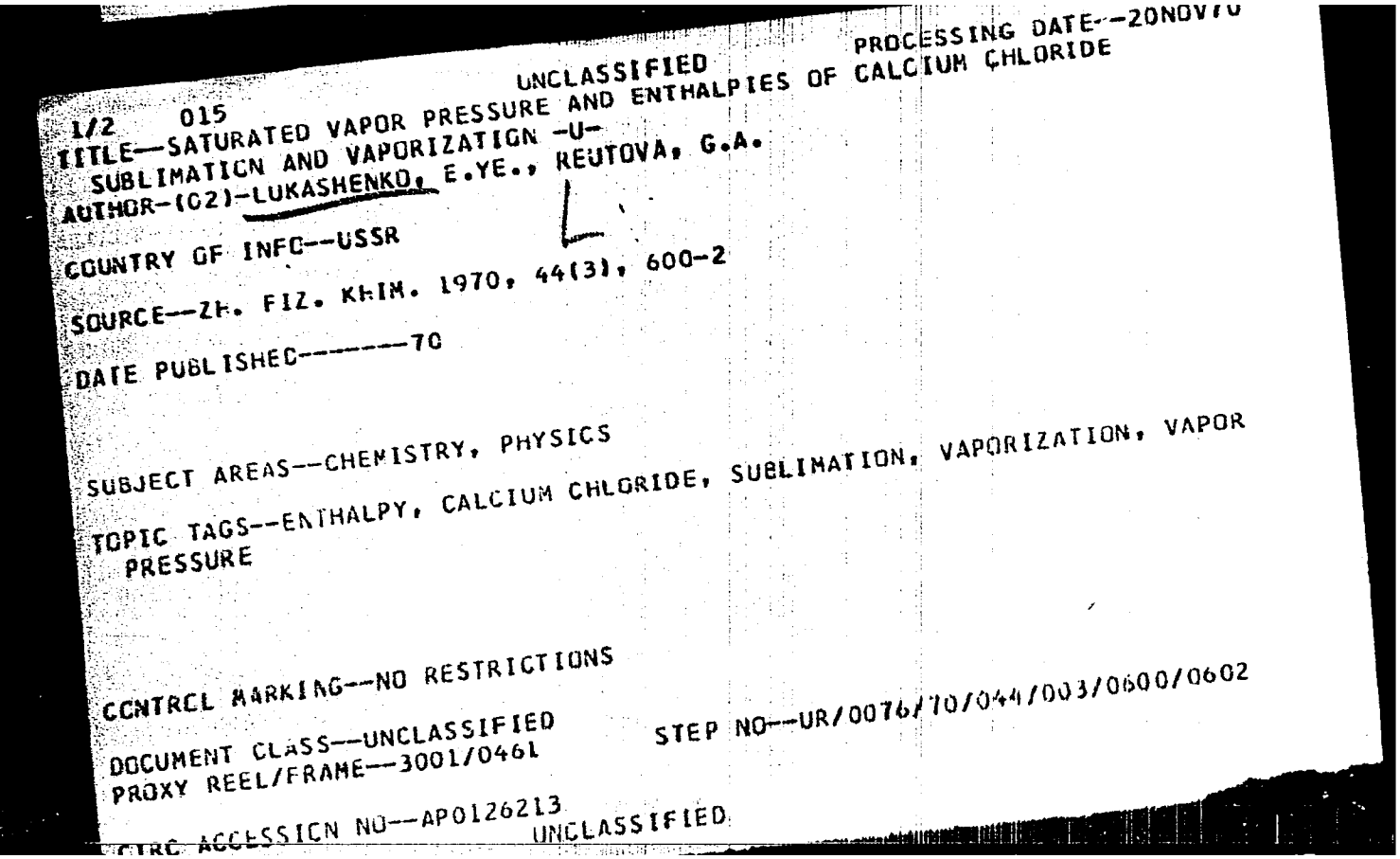


UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 015

TITLE--SATURATED VAPOR PRESSURE AND ENTHALPIES OF CALCIUM CHLORIDE SUBLIMATION AND VAPORIZATION -U-

AUTHOR-(02)-LUKASHENKO, E.YE., REUTOVA, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 600-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--ENTHALPY, CALCIUM CHLORIDE, SUBLIMATION, VAPORIZATION, VAPOR PRESSURE

CONTROL MARKING--NO RESTRICTIONS

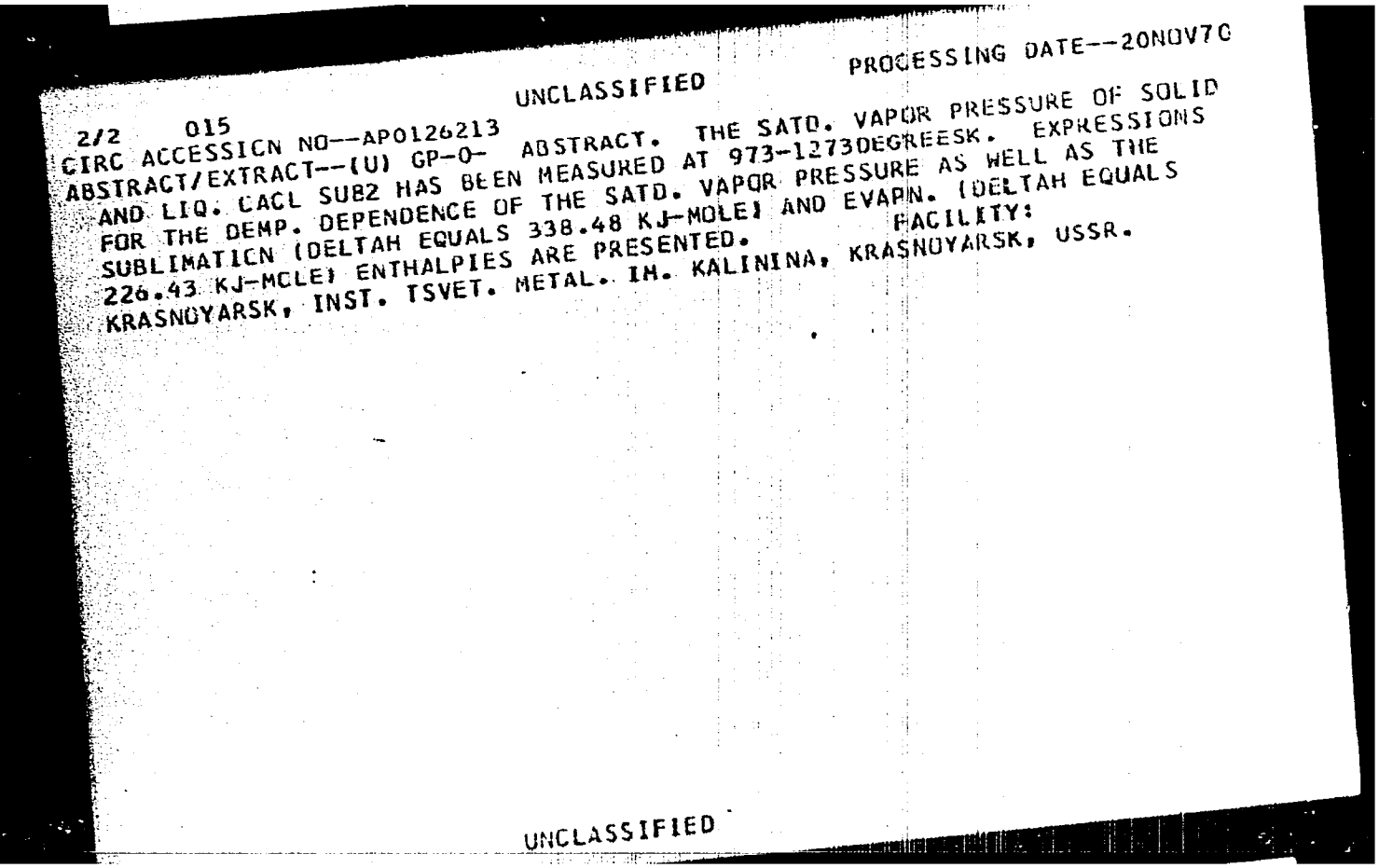
DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0076/70/044/003/0600/0602

PROXY REEL/FRAME--3001/0461

CIRC ACCESSION NO--AP0126213

UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--20NOV70

2/2 015

CIRC ACCESSION NO--AP0126213

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SATD. VAPOR PRESSURE OF SOLID AND LIQ. CACL SUB2 HAS BEEN MEASURED AT 973-1273DEGREESK. EXPRESSIONS FOR THE DEMP. DEPENDENCE OF THE SATD. VAPOR PRESSURE AS WELL AS THE SUBLIMATION (DELTAH EQUALS 338.48 KJ-MOLE) AND EVAPN. (DELTAH EQUALS 226.43 KJ-MOLE) ENTHALPIES ARE PRESENTED.

FACILITY:

KRASNOYARSK, INST. TSVET. METAL. IM. KALININA, KRASNOYARSK, USSR.

UNCLASSIFIED

LUKASHENKO, E. Ye.

JPRS 57572
9 MAR 72

UDC 669.2/8-982:541.18

VAPOR PRESSURE AND THERMODYNAMIC FUNCTIONS OF MAGNESIUM CHLORIDE AND POTASSIUM CHLORIDE IN THE TITANIUM SPONGE (GRAPHITE)-CHLORIDE SYSTEM

[Article by V. L. Kurbatov, E. Ye. Lukashenko, Krasnoyarsk Nonferrous Metals Institute, Department of Physical Chemistry and Theory of Metallurgical Processes; Ordzhonikidze, Izvestiya vysshikh Uchebnykh Zavedeniy, Tsvetnaya Metallurgiya, Russian, No 5, 1971, submitted 19 January 1971, pp 71-75]

The thermodynamics of a system made up of a capillary-porous body and a liquid was studied in detail in the example of carbon (graphite, silicagel) and water as applied to a chemical technological process such as drying colloidal and capillary-porous bodies [1-3, and so on].

Figure 1. Desorption isotherms in the systems: graphite-chloride (a) and titanium sponge-chloride (b).

Key: 1. saturation vapor pressure, mm Hg
2. chloride content in the graphite, % by weight
3. chloride content in the titanium sponge, % by weight

In this paper, a study is made of the thermodynamic characteristics of magnesium chloride and potassium chloride individually in the systems: graphite-chloride and titanium sponge-chloride, which are of practical and

UDC 669.721'71:536.7-669.054.2

USSR

LUKASHENKO, E. YE., and POGODAYEV, A.M.

"Thermodynamics of Liquid Mg-Al Alloys"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 91-96

Abstract: The emf (933 and 1073°K) and "carrier gas" (1073°K) methods were used to investigate thermodynamic properties of melts of the Mg-Al system in the 10-90 mole % range. The electrochemical cell consists of four alundum crucibles placed on a tantalum mounting, and a porcelain beaker; tungsten wire protected by alundum sleeves served as current leads. Mg-Al melts were prepared from Mg-1 magnesium and AV000 aluminum. An anhydrous eutectic mixture of the chlorides of potassium and lithium with the addition of a potential-forming ion (2% $MgCl_2$) was the electrolyte. Activities of components were determined from the results of E and P_{Mg} measurements (P_{Mg} is the saturated vapor pressure of magnesium). The integral thermodynamic functions of these alloys were then calculated. Emf measurements throughout the concentration range investigated showed relatively slight monotonically negative deviations of Mg-Al melts from Raoul's law. The temperature coefficients of the thermodynamic activity of magnesium are small (dE/dT 7.5 10-5 mv/deg). Barometric measurements by the "carrier gas" method yielded monotonically-positive deviations

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USSR

LUKASHENKO, E. Ye., et al, Izvestiya Akademii Nauk SSSR, Metally, No 5, Sep/Oct 71, pp 91-96

of the Mg-Al system from the earlier state. Based on a comparative analysis of the two experimental techniques used for the Mg-Al system and literature data, it was concluded that the most reliable thermodynamic information on Mg-Al melts is currently obtained by the emf method.

2/2

UDC 669.71'721.048

USSR

LUKASHENKO, E. YE., KOPACH, I. I., and POGODAYEV, A. M.

"Two-layer Process for the Vacuum Distillation of Alloys of Light Metals"

V. sb. Vakuumn, protsessy v tsvetn. metallurgii (Vacuum Processes in Non-ferrous Metallurgy -- Collection of Works), Alma-Ata, "Nauka," 1971, 136-141 pp (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 6G169)

TranslationOf Abstract: A new process was considered for the process of vacuum distillation of alloys of light metals by using a "hot" salt bath (two-layer process). As an example the purification of secondary metals and Al alloys are discussed for the characteristic two-layer process of vacuum distillation (14 bibliographic entries)

1/1

UDC 669.71'721.018.9.4

USSR

LUKASHENKO, E. YE., POGODAYEV, A. M., KOPACH, I. I., KUZNETSOVA, V. P.

"Study of the Processes of Refining Aluminum and Magnesium Alloys by Vacuum Distillation"

Metalloved. splavov legkikh met. -- V sb. (Physical Metallurgy of Alloys of Light Metals -- collection of works), Moscow, Nauka Press, 1970, pp 91-98 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G205)

Translation: The kinetics and mechanism of vacuum distillation of aluminum and magnesium alloys (synthetic and industrial) and electrolytic magnesium are studied. The effect of temperature, distillation time, composition, and height of the layer of distilled alloy, the residual pressure, the tap and vapor condensation conditions and kinetic factors on the mechanism, rate, and completeness of refining the alloys is investigated in a broad range of values. There are 4 illustrations, 4 tables, and a 20-entry bibliography.

1/1

UDC 669.721.048

USSR

KURBATOV, V. L., LUKASHENKO, E. YE.

"Study of the Kinetics and Thermodynamics of the Process of Vacuum Distillation of Some Individual Chlorides of a Capillary-Porous Body"

Sb. tr. Vses. mezhvuz. nauch. konferentsii po teorii protsessov tsvetn. metallurgii (Collected Works of the All-Union Interuniversity Scientific Conference on the Theory of Processes in Nonferrous Metallurgy), Alma-Ata, 1971, pp 56-65 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G224)

Translation: A study was made of the kinetics of evaporation of $MgCl_2$ and KCl in a vacuum from pores in finely porous graphite impregnated in advance with them. The saturated vapor pressures of the chlorides above the graphite were measured at 1,073 and 1,123° K. The capillary effect in the $MgCl_2$ and KCl content ranges in the graphite -- 13-2.5 percent and 8-2.5 percent, respectively -- was discovered. The process of distillation of the chlorides from the graphite in a vacuum is represented as comprising three successive stages: 1) kinetic (chloride content in the graphite >17%); 2) diffusion ($MgCl_2$ 17-2.5%, KCl 17-2.2%); 3) desorption ($MgCl_2 \leq 2.5\%$, $KCl \leq 2.2\%$). The bibliography has 18 entries.

1/1

Extraction and Refining

UDC 669.716,721:621.745.55:66.067

USSR

LUKASHENKO, E. Ye., POGODAYEV, A. M., KOPACH, I. I., and KUZNETSOVA, V. P.

"Investigation of Refining Processes of Aluminum and Magnesium Alloys by Vacuum Distillation"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 91-98, resume

Translation: The kinetics and mechanism of vacuum distillation of aluminum and magnesium alloys (synthetic and industrial) and electrolytic magnesium are investigated. Analyzed are, in a broad interval of values, the effects of temperature, duration of distillation, composition and layer depth of the distilled alloy, residual pressure, conditions of elimination and condensation of vapor, and kinetic factors on the mechanism and the rate and completeness of refining alloys. Four figures, four tables, twenty bibliographic references.

1/1

UDC 669.083.04

USSR

LUKASHENKO, E. Ye., and KOPACH, I. I., Krasnoyarsk Institute of Non Ferrous Metals, Department of Physical Chemistry and Theory of Metallurgical Processes

"Vacuum Deleading of Aluminum"

Ordzhonikidze, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Tsvetnaya Metallurgiya, No 5, 1970, pp 45-50

Abstract: The results of an investigation of the process of deleading aluminum by the method of vacuum distillation are presented. The AS1 (0.97 wt.% Pb), AS02 (0.19 wt. % Pb), and AS5 (5 wt. % PB) binary aluminum alloys and the AVS1 (1. wt % Pb) and AVS02 (0.18 wt. % Pb) secondary crude industrial aluminum alloys were investigated. Studies were made of the effect of temperature (973-1373°K), distillation time (30-180 min), initial lead content (0.2-5%), residual pressure (0.01-1.0 mm Hg), and height of alloy layer (10 and 100 mm), on the rate and degree of refining. All tests were conducted on a retort-type laboratory vacuum-distillation installation. A schematic diagram of the installation is presented and the experimental techniques are described. For the purpose of evaluating the process efficiency, the obtained experimental kinetic characteristics of distillation were compared with theoretical

USSR

LUKASHENKO, F. Ye., and KOPACH, I. I., Izvestiya Vysshikh Uchebnykh Zavedeniy -- Tsvetnaya Metallurgiya, No 5, 1970, pp 45-50

calculations using the Langmuir equation for the distillation time. The results show that the optimal parameters and conditions of vacuum distillation of binary Al-Pb alloys and secondary aluminum alloys are: temperature $\geq$ 1273°K, residual pressure $\leq 10^{-2}$mm Hg, and an intensive bath mixing or film distillation. Under these conditions the lead content may be reduced by one or two orders (from 0.2-1.0%) in 1-3 hours. It was established that lead diffusion in the liquid phase appears as a limiting stage of the process. The lead concentration gradient and the thickness of the diffusion layer in the distillation of Al-Pl (1% Pb) alloy were evaluated.

2/2

UNCLASSIFIED

1/2 020 PROCESSING DATE--020CT70

TITLE--SATURATED VAPOR PRESSURE AND ENTHALPIES OF VAPORIZATION OF INDIVIDUAL SODIUM AND POTASSIUM CHLORIDES -U-

AUTHOR-(03)-LUKASHENKO, E.YE., KOROBEYNIKOV, A.P., KHOMAYKO, I.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 341-3

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SODIUM CHLORIDE, POTASSIUM CHLORATE, VAPOR PRESSURE, THERMODYNAMIC CALCULATION, HEAT OF VAPORIZATION

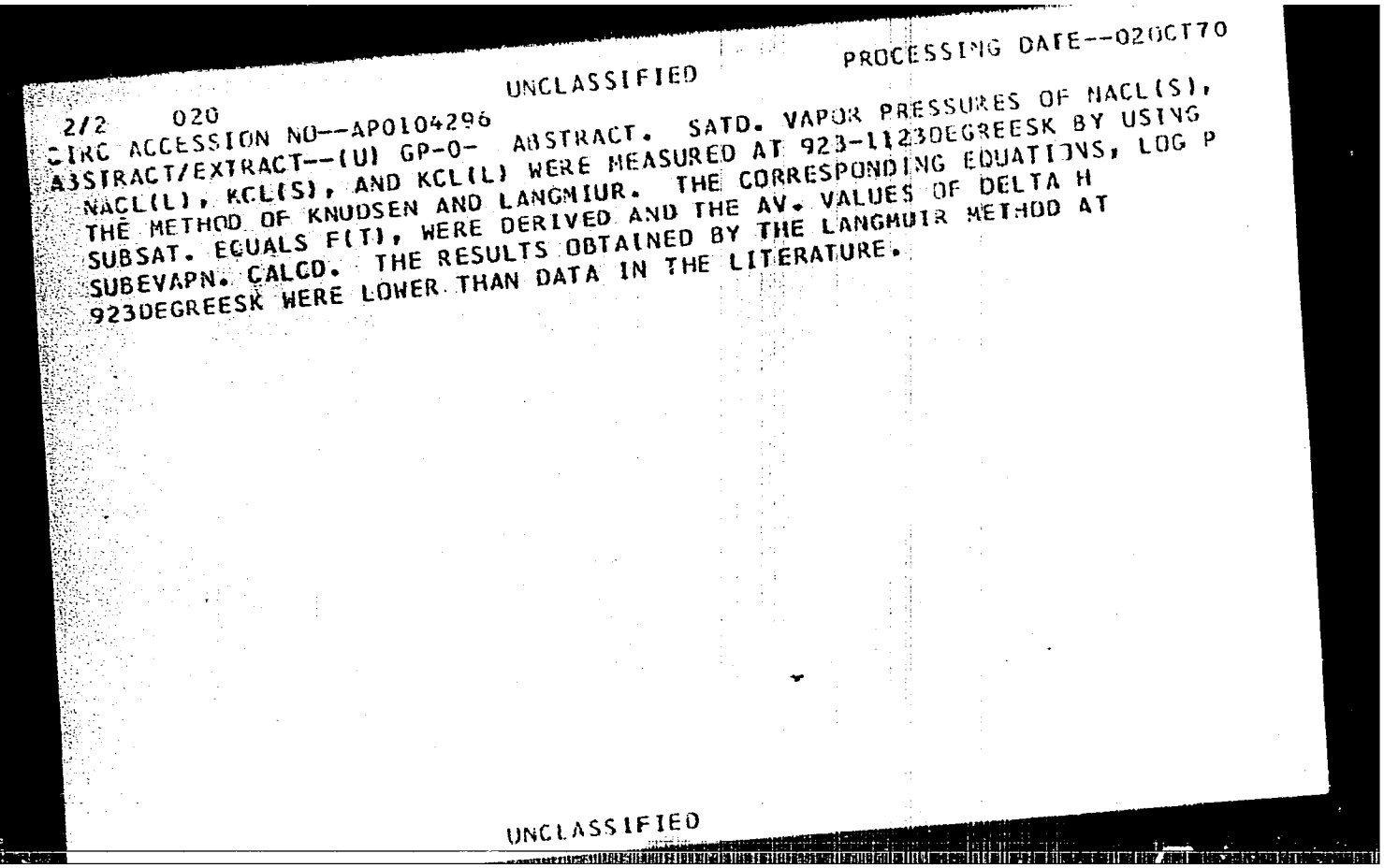
CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0860 STEP NO--UR/0076/70/044/002/0341/0343

CIRC ACCESSION NO--AP0104296

UNCLASSIFIED



UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 020

CIRC ACCESSION NO--AP0104296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SATD. VAPOR PRESSURES OF NACL(S), NACL(L), KCL(S), AND KCL(L) WERE MEASURED AT 923-1123DEGREESK BY USING THE METHOD OF KNUDSEN AND LANGMIUR. THE CORRESPONDING EQUATIONS, LOG P SUBSAT. EQUALS F(T), WERE DERIVED AND THE AV. VALUES OF DELTA H SUBEVAPN. CALCD. THE RESULTS OBTAINED BY THE LANGMUIR METHOD AT 923DEGREESK WERE LOWER THAN DATA IN THE LITERATURE.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

1/2 018

TITLE--SATURATED VAPOR PRESSURE AND ENTHALPIES OF SUBLIMATION AND VAPORIZATION OF MAGNESIUM CHLORIDE -U-

AUTHOR-(02)-LUKASHENKO, E.YE., KURBATOV, V.L.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 331-4

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--MAGNESIUM CHLORIDE, VAPOR PRESSURE, HEAT OF SUBLIMATION, THERMODYNAMIC CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0076/70/044/002/0331/0334

PROXY REEL/FRAME--1987/0862

CIRC ACCESSION NO--AP0104298

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--02OCT70

2/2 018

CIRC ACCESSION NO--AP0104298

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EQUATIONS LOG P PRIME SAT. SUB MGCLS (L) EQUALS (MINUS 10,513-T) MINUS 1.99 LOG T PLUS 15.52 AND LOG P PRIMESAT. SUBMGCLS(S) EQUALS (MINUS 14,033-T) MINUS 1.29 LOG T PLUS 17.00 WERE DERIVED ON THE BASIS OF THE MEASUREMENT OF THE SATD. VAPOR PRESSURE OF MGCL SUB2 IN THE TEMP INTERVAL 923-1073DEGREESK, BY USING THEMETHOD OF KNUDSEN. VALUES OF DELTA H SUBEVAPN AND SUBLIMATION WERE 33.54 AND 44.35 KCAL-MOLE, RESP.

UNCLASSIFIED

USSR

UDC 539.216.2:538.221

PALATNIK, L. S., LUKASHENKO, L. I., ZOLOTNITSKIY, YU. V., and MOROZOVA, N. I., Kharkov Polytechnic Institute imeni V.I. Lenin

"Domain Structure of Permalloy Films With Perpendicular Anisotropy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 941-946

Abstract: Using the powder pattern on two opposite sides of permalloy films, the volumetric distribution model of domain boundaries was derived, according to which the domains form plane-parallel layers at some distance from the permalloy film surface (thickness of films was 100 μm). Domains of the reverse magnetization in a shape of cones were visible inside the principal domains, immediately below the film surface. They were (0.15-0.20) h high, with a base diameter equal to approximately one half of the width of a principal domain. Rows of the conical domains at two opposite sides of a film were shifted by one half of the period with respect to each other. This model agrees in principle with the one suggested before by the authors. However, domains of closure were not detected in the film layer next to the surface, and no domains were found with a gradually decreasing diameter. Very often wedges were visible within the cross-section of a film. Walls of the principal domains deviated from normal in the next-to-surface layer at a depth of the

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USSR

PALATNIK, L. S., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 5, 1973, pp 941-946

conical domains. These walls were not revealed on the film surface by the powder pattern method and their distribution was not established. The perpendicular anisotropy constant of Permalloy films was considerably lower than that of cobalt and other uniaxial single crystals.

2/2

USSR

UDC 669.1:539.216.2:548.4

PALATNIK, L. S., and LUKASHENKO, L. I., Kharkov Polytechnical Institute imeni V. I. Lenin

"'Dislocation' Domain Structure of 'Supercritical' Permalloy Films"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 29, No 4, Apr 70, pp 782-787

Abstract: A study was made of the mechanism of domain rearrangement in the structure of supercritical condensates in a variable magnetic field applied parallel to the domains. Optimum conditions were chosen in preparing the samples which would yield a supercritical state in films of significant thickness (up to tens of microns), a substrate temperature of 300°C, a condensation rate of 10 Å/sec, and a residual chamber pressure of 10^{-4} torr. The composition of the vaporized material was 83% Ni and 17% Fe; the thickness of the condensed layer was 10-20 microns. The films were removed from the substrate in such a manner as not to disturb the magnetic properties due to macrostresses. A magnetic field strength of 200 oe was used and directed perpendicular to the powdered samples. The magnetic (polarity) reversal frequency was 50 Hz.

A domain structure was formed by slowly decreasing the magnitude of H (initially H was greater than saturation--H_s). The domain walls formed zigzag lines, with any particular wall having the appearance of an edge dislocation which

1/3

USSR

PALATNIK, L. S., and LUKASHENKO, L. I., Fizika Metallov i Metallovedeniye, Vol 29, No 4, Apr 70, pp 782-787

the authors preferred to call magnetic dislocations (MD). The MD forms when a domain wall is broken, and in this sense it is similar to an edge dislocation. Movement of MD proceeds by the effect of the magnetic field, and this movement was traced as the magnetic field intensity was increased. At $H = 0.1\ H_s$ the movement of MD was parallel to the domains. At $H = 0.2\ H_s$ one would expect the velocity of the MD to increase; however it was found that this velocity actually decreased, and upon increasing H to $0.3\ H_s$, movement of MD reversed direction. At $H = 0.6\ H_s$ the rate of MD shifting in the opposite direction increased with the simultaneous process of nucleation of new magnetic dislocations. This nucleation occurs by means of the "splitting" of a wall into two domains between which there is established a boundary of opposite polarity. The rapid movement of dislocations at $H = 0.6\ H_s$ led to a new equilibrium state of normal domain structure without MD.

Comparison of domain structures showed that domain width D decreases as the magnitude of H increases. This is explained as the result of the decrease in equilibrium width of the domains. The mechanism of domain structure rearrangement is a result of the activation energies involved--E_1 is the energy expended in shifting a domain wall in the direction perpendicular to the domains, E_2 is the

2/3

L/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--DISLOCATION DOMAIN STRUCTURE OF POSTCRITICAL PERMALLOY FILMS -U-

AUTHOR-(02)-PALATNIK, L.S., LUKASHENKO, L.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA METALLOV I METALLOVEDENIE, VOL. 29, APR. 1970, P. 782-787

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PERMALLOY, BIBLIOGRAPHY, CRYSTAL DISLOCATION, MAGNETIC PROPERTY, MAGNETIC FIELD, METAL FILM, MAGNETIC DOMAIN STRUCTURE, METALLURGIC RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0392 STEP NO--UR/0126/70/029/000/0782/0787

CIRC ACCESSION NO--AP0126147

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0126147

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE MECHANISM OF RESTRUCTING OF THE DOMAIN STRUCTURE OF "POSTCRITICAL" PERMALLOY FILMS UNDER THE ACTION OF AN ALTERNATING MAGNETIC FIELD APPLIED PARALLEL TO THE BAND DOMAINS. IT IS SHOWN THAT A DECREASE IN THE DOMAIN WIDTH WITH AN INCREASE IN FIELD AMPLITUDE OCCURS AS A RESULT OF MOVEMENT OF DISRUPTIONS OF THE STRUCTURAL REGULARITY CALLED MAGNETIC DISLOCATIONS. AN EXPLANATION OF THE OBSERVED PATTERNS OF CHANGE IN THE DOMAIN WIDTH IS GIVEN FROM THE STANDPOINT OF EXISTING FILM MODELS. FACILITY: KHAR'KOVSKII POLITEKHNICHESKII INSTITUT, KHARKOV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC: 550.834

BRODOV, L. Yu., VEDERNIKOV, G. V., KOCHUGOV, N. A., LUKASHENKO, V. F., MUKHUTDINOV, R. A., "Tatneftegeofizika" Trust

"A Device for Automatic Processing of Seismic Recordings"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333511, Division G, filed 25 Jan 71, published 21 Mar 72, pp 183-184

Translation: This Author's Certificate introduces a device for automatic processing of seismic recordings. The device contains operational drums with the primary information media, readout units, a computer unit, a correction unit and a registration unit. As a distinguishing feature of the patent, in order to suppress regular interference waves and retain the shape of the primary signal, the outputs of the readout units are connected through adders and subtractors, the computer unit and a discriminator to a switching element connected in the registration circuit to connect the output of the subtractor to the correction unit and the registration unit.

USSR

UDC: 539.4:629.7.02

BURMAN, Z. I. and LUKASHENKO, V. I.

"Some Results From Calculating a Fuselage by the Finite Elements Method Using an Electronic Digital Computer"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1973, pp 18-24

Abstract: The authors present the results from the realization of the theory for calculating a fuselage by the finite elements method. An example of the calculation is given. Some algorithmic formulas are also presented. Computation control processes are demonstrated. The problem of identification is partially treated and the successful and unsuccessful instances of these processes are indicated. Some stress diagrams are given along with a pattern of stress changes in conjunction with the elimination of a large number of fuselage elements.

1/1

USSR UDC 632.95

ZUBAREV, S. B., IGOSHEV, A. D., LUKASHENOK, V. N., and SOBOLEV, A. S., Ufa Chemical Plant

"A Method for Separating 2,4-Dichlorophenol"

USSR Author's Certificate No 250154, filed 29 May 67, published 15 Jan 70 (From RZh-Khimiya, No 22, 25 Nov 70, Abstract No 22 N707 P by I. M. Mil'shteyn)

Translation: A method is proposed for separating 2,4-dichlorophenol (I), a half-finished product used in the manufacture of herbicides, from a mixture of chlorophenol isomers involving the use of multistage alkaline extracttion in an organic solvent medium. The two-column system consists of two rotary-disk extractors possessing 27 and 22 diska rotating at 100 and 200 rpm, respectively. A NaOH solution is the extracting agent in both columns, 0.9 N for the first and 0.367 N for the second. A mixture of 4.13 N of commerical I is perchloroethylene is supplied to the first column from above while the NaOH enters from below. The raffinate of the first column is 99.8% I. The extract of the first column is acidified with HCl acid. Commercial I is extracted with perchloroethylene, diluted to 0.745 N, and supplied to the second column. The resulting 91.1% I is returned to the first column. 1/1

UDC 534.21:539.3

USSR

LUKASHEV, A.A., LYSKO, YE.M., VEREMEYENKO, S.V., VOZHEVSKAYA, S.M., LOSHCHININ, V.F. (Kishinev), All-Union Scientific Research Institute for the Development of Non-Destructive Methods and Facilities for Quality Control of Materials.

"Distribution of Elastic Waves in a Solid For a Four-Constant Elastic Model of a Continuous Medium"

Kiev, Prikladnaya Mekhanika, No 3, 1972, pp 32-35

Abstract: Equations are obtained for the velocity of sound in a nonlinear four-constant model of a continuous elastic medium. Change of the velocities of the longitudinal waves with pressure is described by a combination of second- and third-order elastic constants. Change of the velocities of the transverse waves is determined only by second-order elastic constants (geometrical nonlinearity). It is shown that the numerical values of second-order elastic constants obtained at zero pressure and at uniaxial compression differ by a factor of several units. 1 table, 4 bibliographic entries.

1/1

USSR UDC 534.21:539.3

SAVIN, G. N., LUKASHEV, A. A., Kiev, Kishinev

"Some Acoustical Effects in a Medium With Internal Degrees of Freedom (Review)"

Kiev, Prikladnaya Mekhanika, Vol 6, No 11, 1970, pp 3-9

Abstract: Most actual solids which are considered isotropic and homogeneous in solid state mechanics actually have microheterogeneities in their internal structure. Consideration of nonlinearities in the theory of isotropic elastic models of solids which internal degrees of freedom (non-local theory of elasticity) leads to a dependence of the velocity of longitudinal and transverse acoustic waves on pressure, while consideration of the microstructure leads to a dependence of the speed of sound on frequency (negative velocity dispersion). Both effects are comparatively slight. For example, in polycrystalline metals, the relative change in the speed of sound does not exceed 10^{-4}-10^{-3} with a change in pressure of 10 Mn/m^2, and will be of the same order of magnitude with a change in oscillating frequency by a

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USSR

SAVIN, G. N., et al. Prikladnaya Mekhanika, Vol 6, No 11, 1970, pp 3-9

factor of 2 in the megacycle frequency range. The development of acoustical equations for theories with gradients, and particularly their experimental testing, encounters certain methodological difficulties at the present time, primarily resulting from the inaccuracies of measurement of velocities and attenuation of sound in both infinite and limited media. Therefore, the problem must be stated of creating improved acoustical methods and apparatus for the measurement of material constants.

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Acc. Nr: AP0047636 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code: UR0057

105088z Postdischarge (exoelectron emission from layers of a vacuum oil). Lukashev, A. A.; Chistyakov, P. N. (Mosk. Inzh.-Fiz. Inst., Moscow, USSR). *Zh. Tekh. Fiz.* 1970, 40 (1), 236–40 (Russ). The problem was investigated whether electron exoemission from a metal body may be an indication of the presence of vacuum oil on the surface of this body. A special device enabled one to admit controlled doses of oil which would cover the electrode (this electrode was held nearly at 77°K). The time behavior of the emission current pulse was measured, and the dependences of the emission current on the duration of oil evapn. (and thus on film thickness) and on the temp. of the oil vapor source were plotted. Currents $<10^{-18}$ A could be measured. A film of contaminating oil can be detected on a metallic surface; the emission increases with oil thickness initially and then a decrease follows. V. Burjan

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REEL/FRAME 19791208

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UDC 636.52/.58:616-02

USSR

LUKASHEV, I. I., (DECEASED), Corresponding Member of the All-Union Order of Lenin Academy of Agricultural Sciences imeni V. I. Lenin

"Morphological Reaction of Thymus and Spleen of Chicks Immunized Against Newcastle Disease (Pseudopest)"

Moscow, Doklady Vsesoyuznoy ordena Lenina Akademii Selskokhozyaystvennykh Nayk imeni V. I. Lenin, No 5, May 71, pp 23-24

Abstract: Fifteen white chicks 5 days old were immunized by aerosol containing dry virus vaccine of strain "N" against Newcastle disease. The vaccine was introduced in a physiological solution with phosphate buffer. Chicks of both experimental and control groups were sacrificed on the third, fifth, and ninth days and preparations were made from thymus glands and spleen. Antibody titers were determined in the blood aera and the nucleic acid contents in histological preparations. Hyperemia and enlargement of the thymus gland were observed in treated chicks. The chicks sacrificed on the fifth day had a considerably enlarged thymus. Both thymus and spleen contained a larger amount of RNA in the cells of the plamocyte series; however, the plasmocytic reaction was more pronounced in the spleen and less in the thymus gland. The number of eosinophilic granulocytes was significantly larger in histological

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LUKHASEV, I. I., Doklady Vsesoyuznoy ordena Lenina Akademii Selskokhozyaystvennykh Nayk imeni V. I. Lenina, No 5, May 71, pp 23-24

preparations form the thymus two days after immunization. In some cases the granulocytes were found to be in a state of breakdown. In the chicks sacrificied on the ninth day after immunization, the amount of eosinophilic granulocytes was somewhat reduced, but still considerably higher than the controls. The number of plasmatic cells both in the cerebral and cortical zones was also increased. The amount of Hassall's corpuscles in various stages of development was increased in vaccinated animals. A considerable increase in the amount of plasmatic cells, together with a simultaneous increase in the number of eosinophilic granulocytes, was discovered in the histological preparations of the spleen from vaccinated chicks. Also, as soon as the third day after immunization, the amount of plasmoblasts and plasmatic cells had increased. In the spleens of chicks sacrificed on the ninth day, the predominance of plasmatic cells existed still. The quantity of eosinophilic granulocytes was enchanced on the third and ninth days. Nevertheless, in comparison with the plasmocytes in the spleen, they were much less prevalent. The results obtained showed that characteristic changes take place in the lymphatic organs as a result of vaccination against Newcastle disease. It is suggested that eosinophilic granulocytes may participate in the protective-adaptive processes of the organism.

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1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--DIRECT OBSERVATION OF THE INTERFERENCE BETWEEN INTERNAL CONVERSION AND PHOTOEFFECT IN DYSPROSIUM 161 -U-

AUTHOR-(04)-LUKASHEVICH, I.I., GOROBCHENKO, V.D., SKLYAREVSKIY, V.V., FILIPPOV, N.I.

COUNTRY OF INFO--USSR

SOURCE--PHYS. LETT. A 1970, 31(3), 112-13

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--RESONANCE ABSORPTION, GAMMA IRRADIATION, ENERGY SPECTRUM, EXCITATION CROSS SECTION, PHOTOELECTRON, MOSSBAUER SPECTRUM, DYSPORSIUM ISOTOPE, INTERFERENCE MEASUREMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0660 STEP NO--NE/0000/70/031/003/0112/0113

CIRC ACCESSION NO--AP0052120

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0052120

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ENERGY DEPENDENCE OF THE CROSS SECTION FOR CREATION OF CONVERSION E DURING THE RESONANT ABSORPTION OF GAMMA RAYS BY PRIME161 DY NUCLEI IN METALLIC DY HAS BEEN INVESTIGATED. THE ASYMMETRY OF THE MOESSBAUER LINE SHAPE OBSD. IN EXPT. IS CONNECTED WITH THE PRESENCE OF AN INTERFERENCE BETWEEN PROCESSES OF PHOTOEFFECT AND INTERNAL CONVERSION. FACILITY: ACAD. SCI., MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr.: AP0029806 Ref. Code: UR 0475

PRIMARY SOURCE: Vrachebnoye Delo, 1970, Nr 1, pp 34-36

DISORDERS OF THE COORDINATORY FUNCTION IN PATIENTS WITH HYPERTENSIVE DISEASE AND ITS RESTORATION IN THE BIOTRON

L. P. Lukashevich (Kiev)

It is concluded that paroxysmal cerebellar and vestibular ataxia is a pathognomonic symptom which evidences decompensation of vaso-neural mechanisms in patients with different stages of hypertensive disease. Normalization of this function under the effect of the biotron factors confirms restoration of the adaptation reserve in patients with hypertensive disease.

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REEL/FRAME
1968192

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--ON SOME CONSEQUENCES OF PROLONGED THIAMINE INJECTION IN THE BODY: CHANGES IN CARBOHYDRATES PROTEINS, AND LIPIDS METABOLISM -U-

AUTHOR-(05)-OSTROVSKIY, YU.M., LUKASHIK, N.K., TREBUKHINA, R.V., DOSTA, G.A., MAZHUL, A.G.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY MEDITSINSKOY KHIMII, 1970, VOL 16, NR 3, PP 316-322

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--THIAMINE, CARBONHYDRATE METABOLISM, PROTEIN METABOLSIM, LIPID METABOLISM, ERYTHROCYTE, ENZYME ACTIVITY, BLOOD SERUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0142 STEP NO--UR/0301/70/016/003/0316/0322

CIRC ACCESSION NO--AP0120842

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120842

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INJECTION OF THIAMINE INTO RATS AND PIGEONS DURING 1-8 MONTHS RESULTED IN THE ELEVATION OF ACTIVITY OF TRANSKETHOLASE IN ERYTHROCYTES AND PYRUVIC ACID DEHYDROGENASE IN HEART AND LIVER. AT THE SAME TIME THE DECREASE IN PHOSPHORYLASE ACTIVITY AND GLYCOGEN ACCUMULATION IN LIVER, THE INCREASE IN PLASMA ALDOLASE AS WELL AS HEART AND MUSCLE ENZYME,.GLUCOSE,6,PHOSPHATASE IN LIVER,GLYCOGENOLYSIS IN ERYTHROCYTES, CHANGES IN PROTEIN FRACTION CONTENT IN BLOOD SERUM, CHANGES IN SH GROUPS CONTENT IN THE BRAIN AND BLOOD PLASMA, AND CHANGES IN GLUTAMATE DECARBOXYLASE IN THE BRAIN WERE OBSERVED. FACILITY: CHAIR OF BIOCHEMISTRY, MEDICAL INSTITUTE, GRODNO.

UNCLASSIFIED

USSR

UDC: 51:621.391

LUKASHIN, I. A.

"A Method of Determining the Number of Undetected Errors in Data Transmission by Hamming Code"

Minsk, Teoriya i primeneniye mat. mashin--sbornik (Theory and Application of Mathematical Machines--collection of works), Belorussian University, 1972, pp 53-59 (from RZh-Kibernetika, No 5, May 73, abstract No 5V586 by the author)

Translation: Based on the properties of Hamming codes, a procedure is given for determining the number of undetected errors in transmission of information. Formulas are presented for determining the number of triple and quadruple undetected errors.

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Conferences

USSR UDC 621.791.002.61:3(083.8)

LUKASHINA, N. D., Candidate of Technical Sciences

"Second All-Union Seminar on Scientific-Technical Information on Welding"

Moscow, Svarochnoye Proizbodstvo, No 4, Apr 71, pp 59-60

Abstract: The second All-Union Seminar on Scientific-Technical Information on welding was held in Moscow, on 2-3 November 1970, at the All-Union Institute of Scientific and Technical Information (VINITI). More than 150 people from 15 cities participated. The theme of the Seminar was "Prospects for the organization of an information service for scientists and welding specialists on the basis of selective distribution of the scientific-technical information." Reports were presented on the automation by computer of information work, automatic data search and retrieval, the use of the "Kristall" ("Crystal") system for information service, the technology of selective data distribution the basis of a descriptive data retrieval system, and the prospects for the organization and development of inquiries-information funds on welding.

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